IN THE CLAIMS

WE CLAIM:

1. A self-aligning flange for aligning a centerline of a motive force means with a centerline of a rotating member supported by a frame, the self-aligning flange comprising:

an annular ring providing a mounting surface for the motive force means, the annular ring having a rim and a plurality of radially aligned projections on the rim, the projections circumferentially spaced approximately 90° apart;

a circular well in the frame, the circular well having an interior surface with a plurality of slots therein, wherein the number said plurality of slots equals the number of said plurality of radially aligned projections and where each slot is longitudinally aligned with the centerline of the rotating member and spaced about the interior surface to receive the projection of the annular ring in axial sliding contact therein;

wherein the centerline of the motive force means is aligned with the centerline of the rotating member and the projections move axially within their respective slots as the rotating member rotates so that the centerline of the motive force means maintains alignment with the centerline of the rotating member as the centerline of the rotating member oscillates from unbalancing forces.

2. The self-aligning flange of claim 1 wherein the number of said plurality of slots and said plurality of radially aligned projects is four.

3. The self-aligning flange of claim 1 wherein a motive force means is provided for both ends of a rotating cylindrical drum, where the motive force means is mounted on a self-aligning flange as set forth in claim 1.

4. The self-aligning flange of claim 1 wherein said motive force means is a gear box in combination with a motor.

5. A cutting apparatus comprising

a drum assembly having two ends, where each of said ends of said drum is maintained in rotation by a motive force means, said motive force means is held in alignment with the other motive force means by a self-aligning flange having a rim, said rim being allowed to move axially within a limited distance.

6. The cutting apparatus of claim 5 wherein said self-aligning flange comprises:

a pair of annular rings, each of said pair of annular rings providing a mounting surface for a motive force means, the annular ring having a rim and a plurality of radially aligned projections on the rim, the projections circumferentially spaced approximately 90° apart;

two frames, each having a circular well having an interior surface with a plurality of slots therein, wherein the number said plurality of slots equals the number of said plurality of radially aligned projections and where each slot is longitudinally aligned with the centerline of the drum assembly and spaced about the interior surface to receive the projection of the annular ring in axial sliding contact therein.

7. The self-aligning flange of claim 1 wherein the number of said plurality of slots and said plurality of radially aligned projects is four.

8. The self-aligning flange of claim 1 wherein said motive force means is a gear box in combination with a motor.